

# SERVICE MANUAL

## INTEGRATED STEREO AMPLIFIER

### SANSUI AU-919



#### SPECIFICATIONS

##### Power output

Min. RMS, both channels driven, from 10 to 20,000 Hz, with no more than 0.008 % total harmonic distortion

100 watts per channel into 8 ohms

##### Load impedance

8 ohms

##### Total harmonic distortion (POWER AMP IN)

less than 0.008 % at or below rated min. RMS power output

##### Intermodulation distortion (70 Hz : 7 kHz = 4:1 SMPTE method)

less than 0.008 % at or below rated min. RMS power output

##### Rise time

0.5  $\mu$ sec

##### Slew rate

200 V/ $\mu$ sec

##### Frequency response (at 1 watt) (POWER AMP IN)

DC to 500,000 Hz +0 dB -3 dB

##### Damping factor (1 kHz, both channels driven)

100 into 8 ohms

##### RIAA curve deviation (PHONO, 20 Hz to 20 kHz)

+0.2 dB, -0.2 dB

##### Input sensitivity and impedance (1 kHz, for rated power output)

PHONO-1 (MC) . . . . . 0.1 mV/10 ohms

(Max. input capability; 30 mV at 1 kHz, less than 0.03 % total harmonic distortion)

PHONO-1, 2 (MM) . . . . . 2.5 mV/47 kilohms

(Max. input capability; 350 mV at 1 kHz, less than 0.01 % total harmonic distortion)

##### AUX, TUNER, TAPE PLAY

150 mV/47 kilohms

##### POWER AMP IN

1 V/47 kilohms

##### Output level and impedance (1,000 Hz)

TAPE REC (pin jack) . . . . . 150 mV into 47 kilohms/

600 ohms

PREAMP OUT . . . . . 1 V into 47 kilohms/

1.5 kilohms

##### Channel separation (1 kHz, at rated power output)

PHONO-1 (MC) . . . . . 70 dB

PHONO-1, 2 (MM) . . . . . 75 dB

##### AUX, TUNER, TAPE PLAY

80 dB

##### Hum and noise (short-circuit, A-network)

PHONO-1 (MC) . . . . . 74 dB

PHONO-1, 2 (MM) . . . . . 90 dB

##### AUX, TUNER, TAPE PLAY

100 dB

##### Controls

BASS . . . . .  $\pm 6$  dB (50 Hz)

Tone selector . . . . . 150 Hz, 300 Hz

TREBLE . . . . .  $\pm 6$  dB (15 kHz)

Tone selector . . . . . 3 kHz, 6 kHz

SUBSONIC . . . . . -3 dB (16 Hz), 6 dB/oct

MUTING . . . . . -20 dB

##### Power requirements

Power voltage . . . . . 100, 120, 220, 240V (50/60 Hz)

##### Power consumption

Rated consumption . . . . . 480 watts

Dimensions . . . . . 430 mm (16-15/16") W

168 mm (6-5/8") H

428 mm (16-7/8") D

Weight . . . . . 21.4 kg (47.2 lbs) net

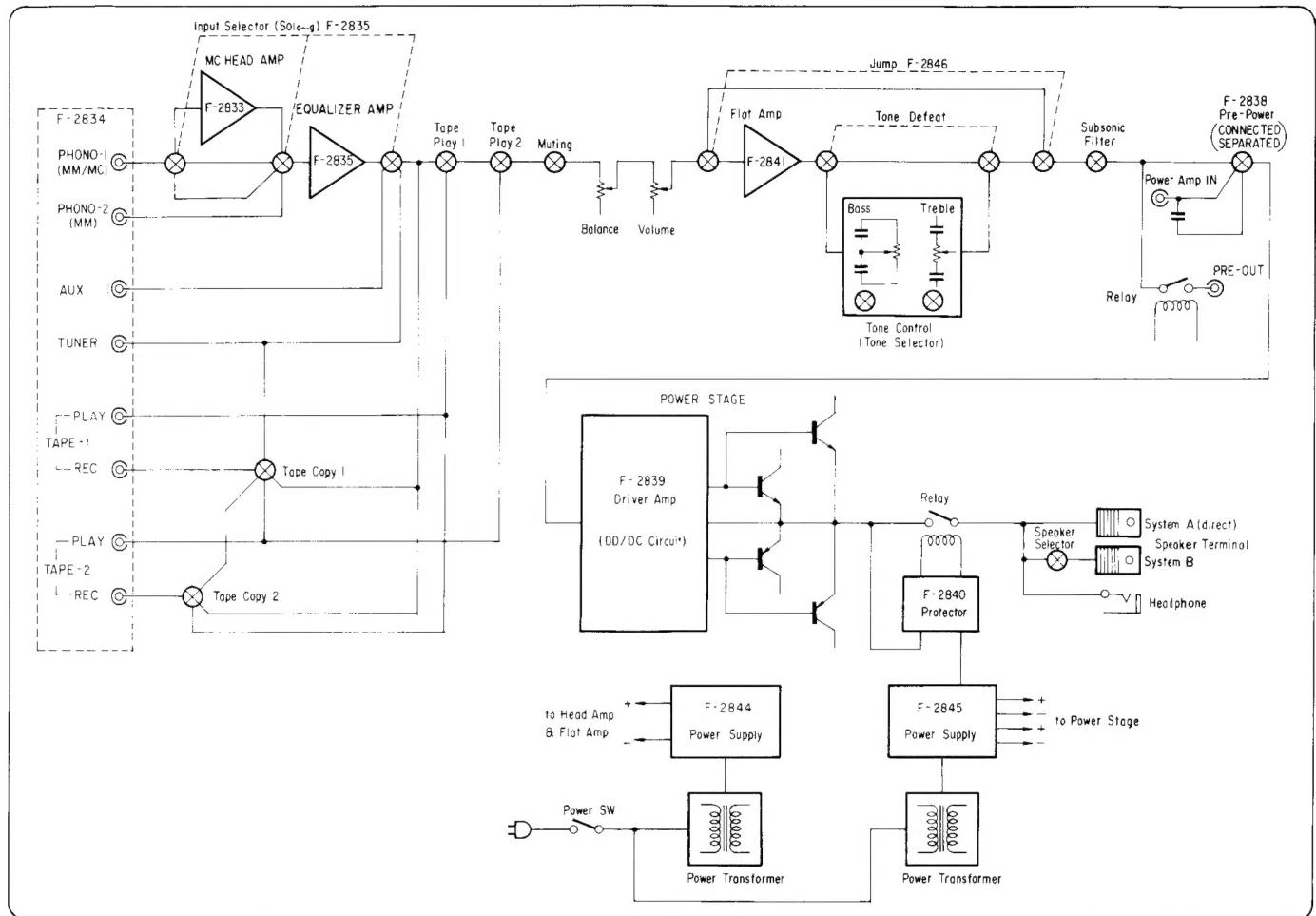
23.8 kg (52.5 lbs) packed

- Design and specifications subject to changes without notice for improvements.

**Sansui**

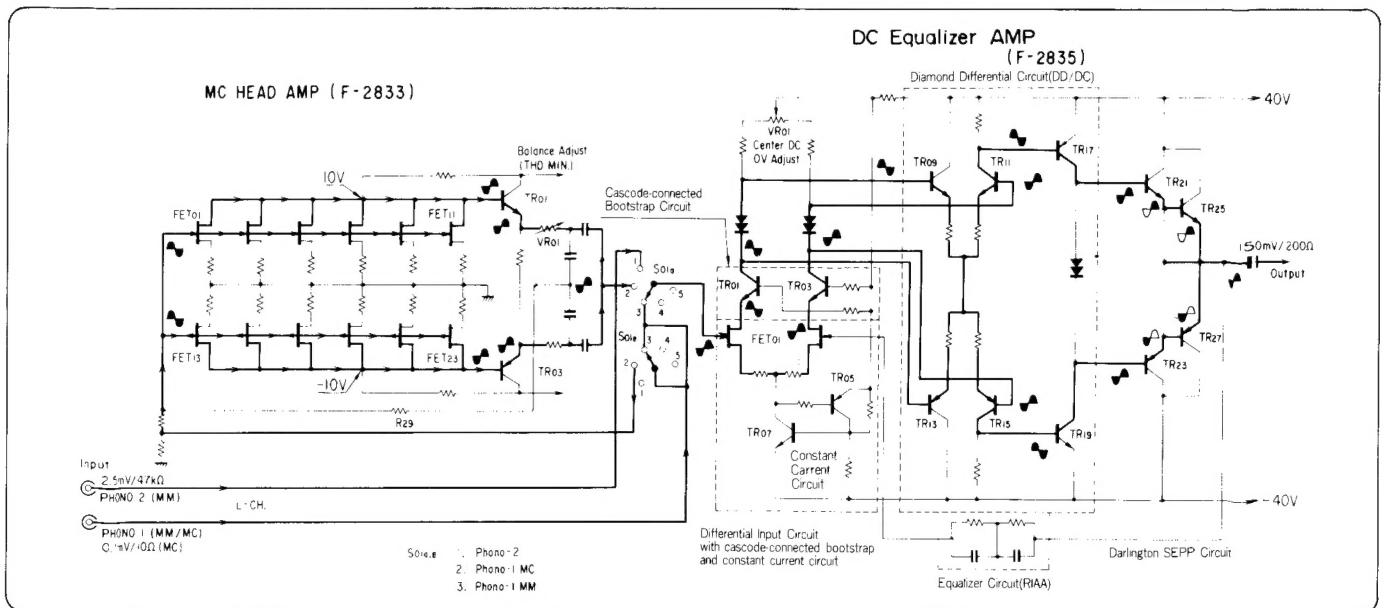
SANSUI ELECTRIC CO., LTD.

# 1. BLOCK DIAGRAM



# 2. CIRCUIT DESCRIPTION

## 2-1. MC Head Amp and Phono Equalization Circuit



### • MC Head Amp and Phono Equalization Circuit (Refer to Fig. 2-1)

The circuit configuration from MC head Amp to output of power amp stage used in AU-919 is a fully Push-pull DC amp with direct coupled input-capacitor-less DC amplifier. In order to ignore time constant with lagging or leading phase caused by input capacitor, FET input circuits are employed. By this, higher slew-rate and low-noise factor can be obtained.

1) MC (Moving Coil) type cartridge generally requires head amp to boost up weak signal from the stylus. The pre-amp section of AU-919 includes this head amp and conventional phono equalizer circuit for MM (Moving Magnet) type cartridge. MC type cartridge provides high frequency performance and excellent tonal quality, but as its output voltage from stylus is as low as approx. 0.1mV, the MC head amp or step-up transformer is needed as mentioned above. To ensure the outstanding performance in tone quality and signal-to-noise ratio(S/N), AU-919 employs the head amp which meets with these requirements.

The circuit configuration of MC head amp in AU-919 is input-capacitor-less (ICL) direct coupled complementary circuit using low-noise and high gm FETs of P-ch and N-ch in parallel connection on both channels. The requirements of MC head amp are to provide a enough S/N ratio and gain to connect the MC head amp to conventional phono equalizer. (approximately 28dB for MC cartridge with output impedance, 10 ohms). As high gm can be obtained equivalently by connecting low-noise & high gm FET in parallel, remarkable S/N ratio and gain(gm) can be obtained.

\* The relation between noise and gm of FET is indicated as shown below.

$$em = \sqrt{4 K T B R}$$

em = Noise voltage  
K = Boltzman constant  
T = Absolute temperature  
B = Band width  
R = Channel resistance of FET  
(= 1/gm)

Channel resistance R of FET is equal to 1/gm. By this, when FETs are connected in parallel, the total gm becomes higher and S/N ratio is excessively improved.

On AU-919, -154dB of total noise level under equivalent input is obtained. The circuit as shown in Fig. 2-1 uses ICL construction with total six low-noise Dual-FETs per channel (in case of using rank K2 of the FET) in parallel push-pull connection, and Diamond differential DC(DD/DC) circuit with fully push-pull transistor in output stage of the pre-amp section.

2) Phono equalizer circuit is input-capacitor-less (ICL) direct coupled DC equalizer amp employing DD/DC circuit. The output impedance on this circuit is as low as 200 ohms, S/N ratio better than 90dB and the deviation of RIAA equalization curve within  $\pm 0.2\%$ . In addition, the slew rate of the equalization circuit itself is excessively high, 200V/ $\mu$ sec.

The circuit configuration of pre-amp section as shown in Fig. 2-1 is that the first stage is differential input circuit of Dual-FET with cascode-connected bootstrap, and high performance constant current circuit to avoid tonal coloration, phase shift and external noise, and second and third stage include DD/DC circuit with high driving capability. The output stage is composed of Darlington-connected SEPP circuit.

The features of the constant current circuit and the bootstrap circuit are simply explained below, description of DD/DC circuit is on the next page.

#### \* Constant Current Circuit

Common mode rejection ratio and power supply rejection ratio, as an advantage of differential amplifier, can be more improved by adding the constant current circuit.

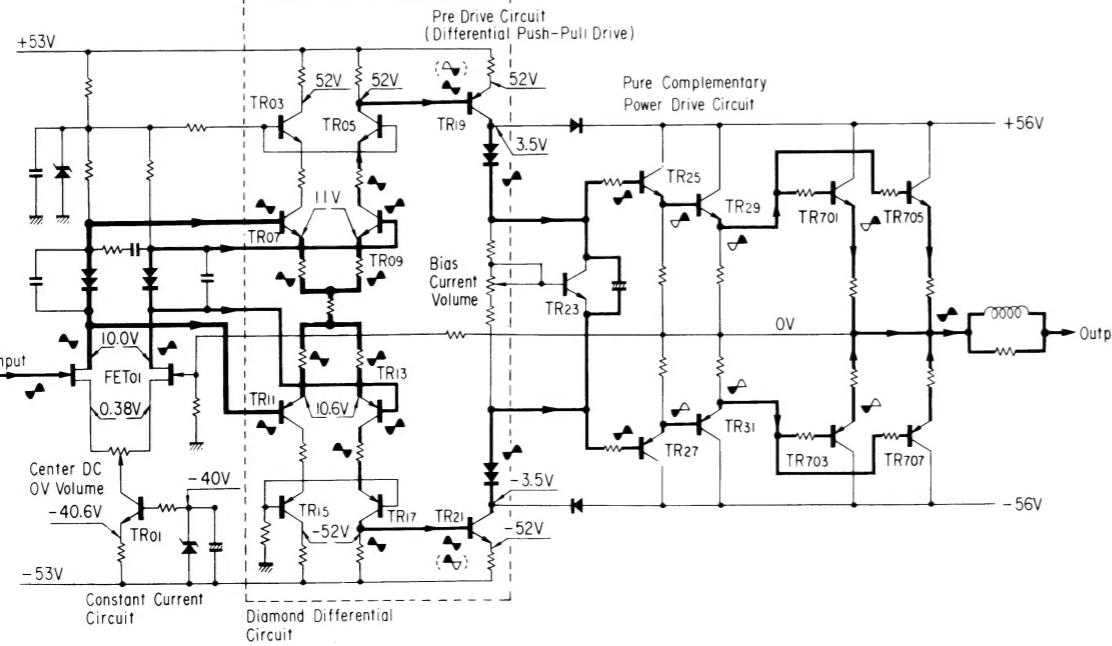
#### \* Cascode bootstrap circuit

This circuit allows the following features as differential amplifier using low-noise Dual-FET.

1. Gate leak current is almost ignored by making voltage between Drain and Source of FET low.
2. As mirror effect is decreased, the frequency response of high range is more extended.
3. The distortion caused by voltage dependence of negative feedback capacitance is decreased.
4. Linear response can be highly improved.

## 2-2. Operation and Features of Diamond Differential DC(DD/DC) Circuit

Fig. 2-2



### 3. ADJUSTMENTS

Notes: 1. Level Volume . . . . . Minimum  
2. Room Temperature . . . . . 18°C ~ 28°C  
(65°F ~ 83°F)

- When replacing some parts or circuit board, refer to description in REMARKS.
- For this adjustment, run the unit for more than 3 minutes after the power is switched ON.

#### 3-1. MC Head Amp (F-2833) Adjustment (See Fig. 3-1 & 3-4)

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1	Voltage Adj. L-ch + side	Between chassis (GND) and one of Drains of FET01, FET03, FET05, FET07, FET09, FET11 (between GND and <b>(A)</b> in Fig. 3-1) Each Drain of all FETs (2SK163) commonly connected.	VR03 (L-ch) F-2833	+10V ±1V	Before turning ON power switch, set VR01, VR05, VR03 (R-ch) and VR04, VR06, VR02 (L-ch) to center position.
2	R-ch + side	Between chassis (GND) and one of Drains of FET02, FET04, FET06, FET08, FET10, FET12 (between GND and <b>(B)</b> in Fig. 3-1)	VR04 (R-ch) F-2833		
3	L-ch - side	Between chassis (GND) and one of Drains of FET13, FET15, FET17, FET19, FET21, FET23 (between GND and <b>(C)</b> in Fig. 3-1) Each Drain of all FETs (2SJ44) commonly connected.	VR05 (L-ch) F-2833	-10V ±1V	
4	R-ch - side	Between chassis (GND) and one of Drains of FET14, FET16, FET18, FET20, FET22, FET24 (between GND and <b>(D)</b> in Fig. 3-1)	VR06 (R-ch) F-2833		
5	Balance adj. in case of using distortion meter	VR01 (L-ch) VR02 (R-ch) F-2833	Minimum distortion		<ul style="list-style-type: none"> <li>Feed sine-wave signal, 1 kHz to PHONO-1</li> <li>Refer to notes below.</li> </ul>

Notes: Balance adj. in step 5 with distortion meter

- Feed sine-wave signal, 1 kHz to PHONO-1.
- Connect distortion meter to TAPE-REC input terminal and set output level of TAPE-REC to 20 volts by adjusting audio oscillator output.
- Add 10 ohms, 1/4W, across output terminal of audio oscillator to have impedance matching.

Balance adj. without distortion meter

- VR01 . . . Set VR01 to 2/3 position from max. point.
- VR02 . . . Set VR02 to 2/3 position from min. point.

#### 3-2. Equalizer (F-2835) Adjustment (See Fig. 3-2)

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1	DC0V Adj.	Between GND & common joint of R67, R69 (between GND and <b>(E)</b> )	VR01 (L-ch) F-2835	DC 0V ±50 mV	Before turning ON power switch, set VR01 & VR02 to center position.
2	DC0V Adj.	Between GND & common joint of R68, R70	VR02 (R-ch) F-2835		

#### 3-3. Flat Amp (F-2841) Adjustment (See Fig. 3-5)

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1	DC0V Adj.	Between GND & TEST POINT from emitter of TR13 through R43 (TEST POINT between $\oplus$ & $\ominus$ in Fig. 3-5)	VR01 (L-ch) F-2841	DC 0V ±10 mV	Before turning ON power switch, set VR01 & VR02 to center position.
2	DC0V Adj.	Between GND & TEST POINT from emitter of TR14 through R44 (TEST POINT between $\oplus$ & $\ominus$ in Fig. 3-5)	VR02 (R-ch) F-2841		

#### 3-4. Driver Circuit (F-2839) Adjustment (See Fig. 3-3/3-4)

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1	DC 0V Adj. (see Fig. 3-3)	Speaker terminal (L-ch)	VR01 (L-ch) F-2839	DC 0V ±5 mV	Before turning ON power switch, set VR01 & VR02 to center position.
2	DC 0V Adj. (see Fig. 3-3)	Speaker terminal (R-ch)	VR02 (R-ch) F-2839		
3	Bias current Adj.	Between emitters of power transistors TR707 & TR705 (between <b>(C)</b> & <b>(H)</b> in Fig. 3-4)	VR03 (L-ch) F-2839	DC 20 mV ±1 mV	<ul style="list-style-type: none"> <li>Before turning ON power switch, turn VR03 &amp; VR04 fully counter-clockwise.</li> <li>This bias current adjustment converts current value into voltage by Ohm's law.</li> </ul>
4	Bias current Adj.	Between emitters of power transistors TR706 & TR708 (between <b>(I)</b> & <b>(H)</b> in Fig. 3-4)	VR04 (R-ch) F-2839		

Fig. 3-1 F-2833 MC Head Amp Circuit Board (Component side)

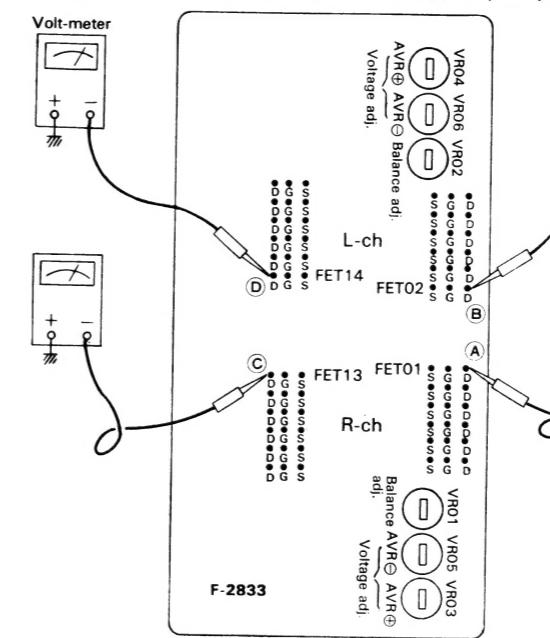


Fig. 3-2 F-2835 Equalizer Amp Circuit Board (Component side)

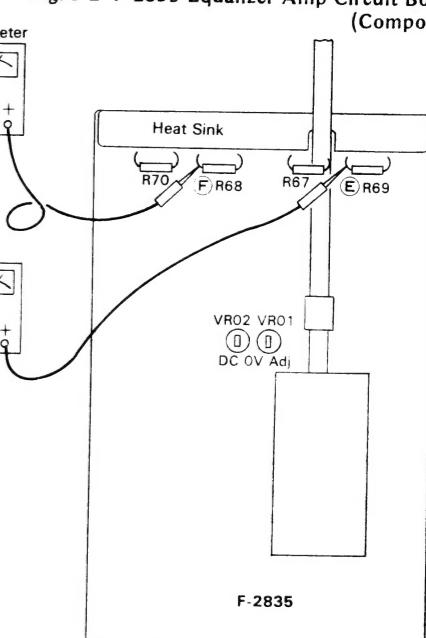


Fig. 3-3 SPEAKER TERMINAL

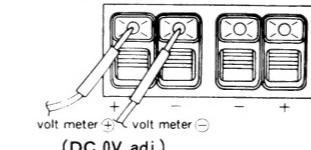
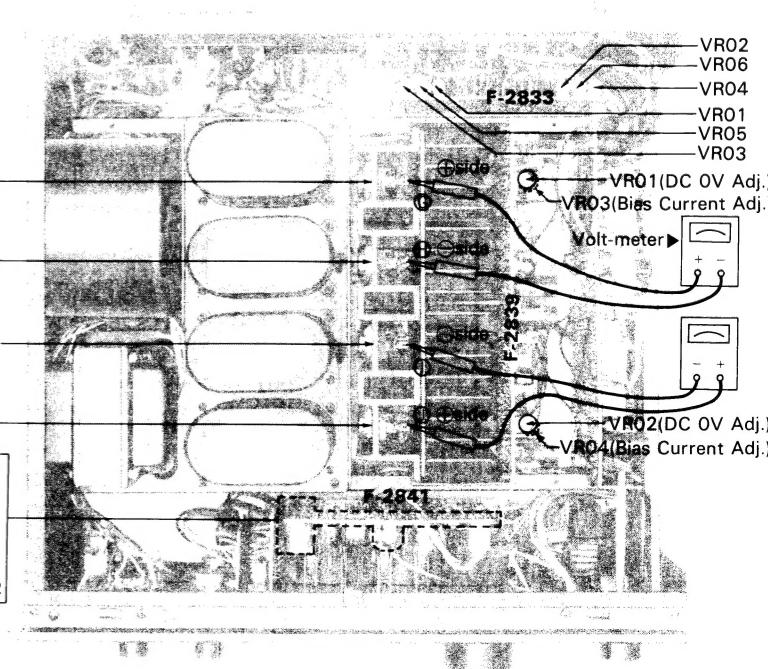
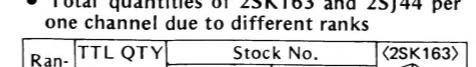
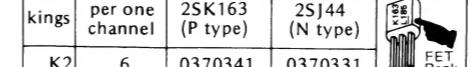
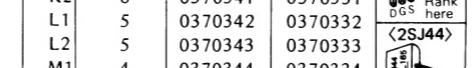
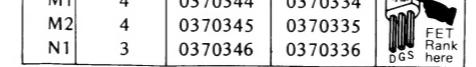


Fig. 3-4



▼Rear Side

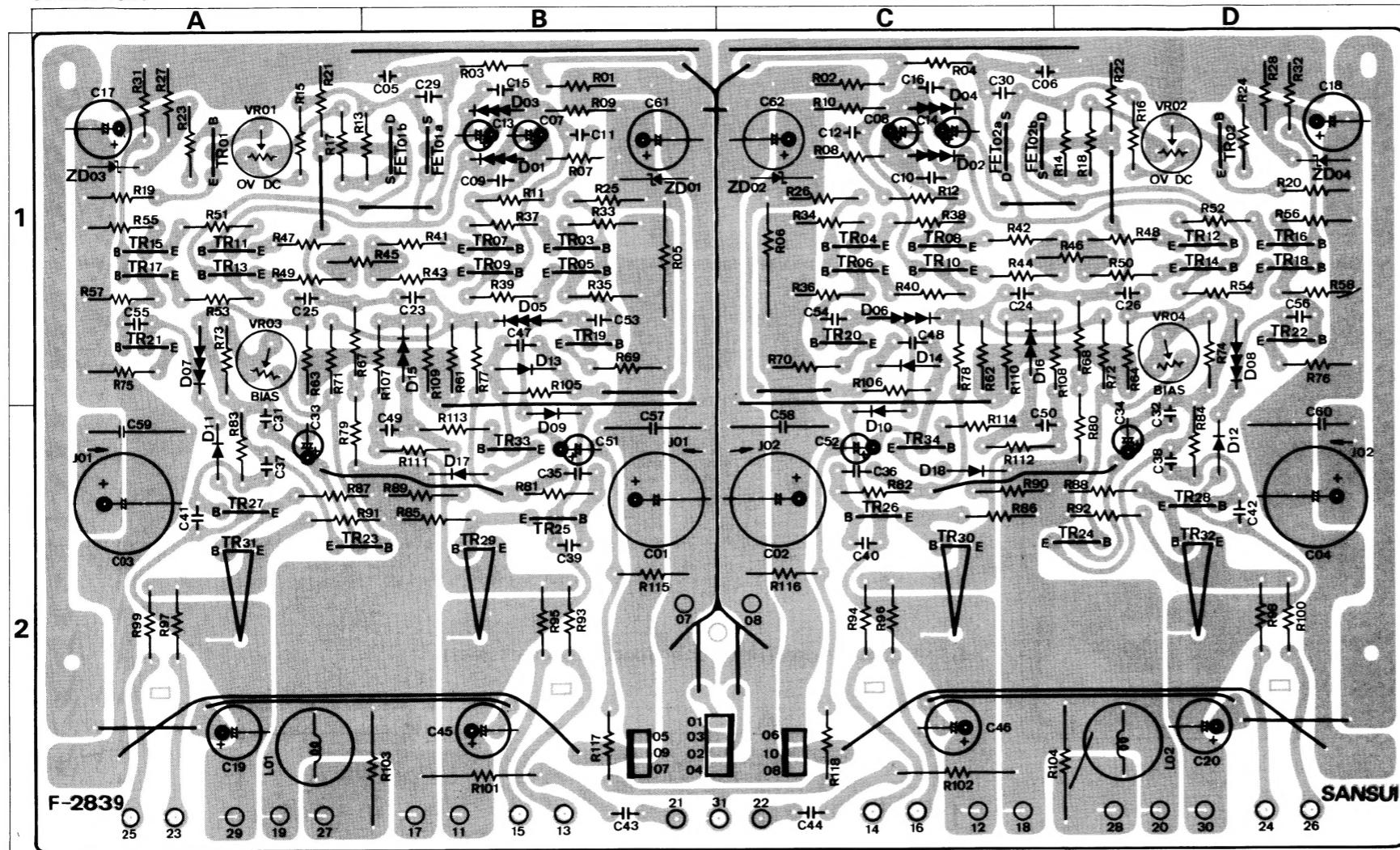
- Notes when replacing FETs on F-2833  
There are six kinds of FET, ranks 2SK163 (P type) and 2SJ44 (N type) on F-2833, MC Head Amp Circuit Board. When replacing some of FETs, use same rank of the 2SK163 and 2SJ44 as a pair per one channel. Also, total quantities of FETs per one channel are determined depending upon the respective FET ranks having slightly different gain (gm).
- Total quantities of 2SK163 and 2SJ44 per one channel due to different ranks

Rankings	TTL QTY per one channel	Stock No.		Fig. 3-5
		2SK163 (P type)	2SJ44 (N type)	
K2	6	0370341	0370331	
L1	5	0370342	0370332	
L2	5	0370343	0370333	
M1	4	0370344	0370334	
M2	4	0370345	0370335	
N1	3	0370346	0370336	

## 4. PARTS LOCATION & PARTS LIST

#### 4-1. F-2839 Driver Amp Circuit Board (Stock No. 7571991)

### Conductor Side



## Parts List

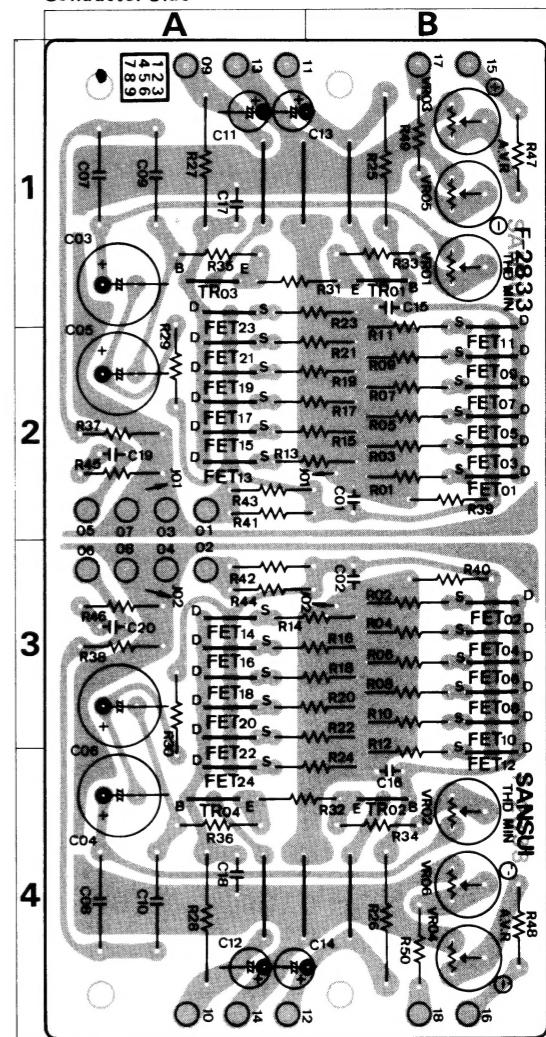
Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
● Transistors				● Zener Diodes			
TR01,02	0306680,1	2SC2071 B, V	1A.1D	ZD01,02	0317190	RD-27F B	1B.1
TR03,04	-0306740,1	2SC1845 E, U	1B.1C	ZD03,04	0316310	RD13E B	1A.1
TR05,06	0306740,1	2SC1845 E, U	1B.1C	C 01,02	0516471	470µF 63V E.C.	2B.2
TR07,08	0306740,1	2SC1845 E, U	1B.1C	C 03,04	0516471	470µF 63V E.C.	2A.2
TR09,10	0306740,1	2SC1845 E, U	1B.1C	C 05,06	0622101	100pF 125V P.C.	1B.1
TR11,12	0301090,1	2SA992 E, U	1A.1D	C 07,08	0515479	4.7µF 50V E.C.	1B.1
TR13,14	0301090,1	2SA992 E, U	1A.1D	C 09,10	0680037	0.033µF 100V M.C.	1B.1
TR15,16	0301090,1	2SA992 E, U	1A.1D	C 11,12	0622681	680pF 125V P.C.	1B.1
TR17,18	0301090,1	2SA992 E, U	1A.1D	C 13,14	0515479	4.7µF 50V E.C.	1B.1
TR19,20	0301030,1	2SA939 B, V	1B.1C	C 15,16	0680037	0.033µF 100V M.C.	1B.1
TR21,22	0306680,1	2SC2071 B, V	1A.1D	C 17,18	0515470	47µF 50V E.C.	1A.1
TR23,24	0306740,1	2SC1845 E, U	1A.2D	C 19,20	0516339	3.3µF 63V E.C.	2A.2
TR25,26	0306680,1	2SC2071 B, V	2B.2C	C 23,24	0623309	3pF 125V P.C.	1B.1
TR27,28	0301030,1	2SA939	2A.2D	C 25,26	0623309	3pF 125V P.C.	1A.1
TR29,30	0308441,2,3	2S 3D282 M, L, K	2B.2C	C 29,30	0623220	22pF 125V P.C.	1B.1
TR31,32	0303271,2,3	2SB537 M, L, K	2A.2D	C 31,32	0280041	0.047µF 100V M.C.	2A.2
TR33,34	0306740,1	2SC1845 E, U	2B.2C	C 33,34	0515109	1µF 50V E.C.	2A.2
● FET				C 35,36	0680001	0.001µF 100V M.C.	2B.2
FET01,02	0370310,1	2SK129 K, L	1B.1C	C 37,38	0680001	0.001µF 100V M.C.	2A.2
● Varistors				C 39,40	0623330	33pF 125V P.C.	2B.2
D 01,02	0340170	MV-103	1B.1C	C 41,42	0623330	33pF 125V P.C.	2A.2
D 03,04	0340170	MV-103	1B.1C	C 43,44	0680041	0.047µF 100V P.C.	2B.2
D 15,16	0340150	MV-12	1B.1C	C 45,46	0516339	3.3pF 63V E.C.	2B.2
● Diodes				C 47,48	0680001	0.001µF 100V P.C.	1B.1
D 05,06	0310480	SV-03	1B.1C	C 49,50	0680001	0.001µF 100V P.C.	2B.2
D 07,08	0310480	SV-03	1A.1D	C 53,54	0623309	3pF 125V P.C.	1B.1
D 09,10	0310360	10D2 (1S2227)	2B.2C	C 55,56	0623309	3pF 125V P.C.	1A.1
D 11,12	0310360	10D2 (1S2227)	2A.2D	C 57,58	0681018	0.22µF 400V M.C.	2B.2
D 13,14	0310400	1N34A	1B.1C	C 59,60	0681018	0.22µF 400V M.C.	2A.2
D 17,18	0311160	1S2473D	2B.2C	C 61,62	0514101	100µF 35V E.C.	1B.1
R 01,02	0280563	56kΩ 1/3W C.R.		R 01,02	0280563	56kΩ 1/3W C.R.	1B.1

Since some of capacitors and resistors are omitted from parts lists in this Service Manual, refer to the Common Parts List for capacitors & resistors which was appended previously to each Sansui Manual.

## 4-2. F-2833 MC Head Amp Circuit Board

### Conductor Side

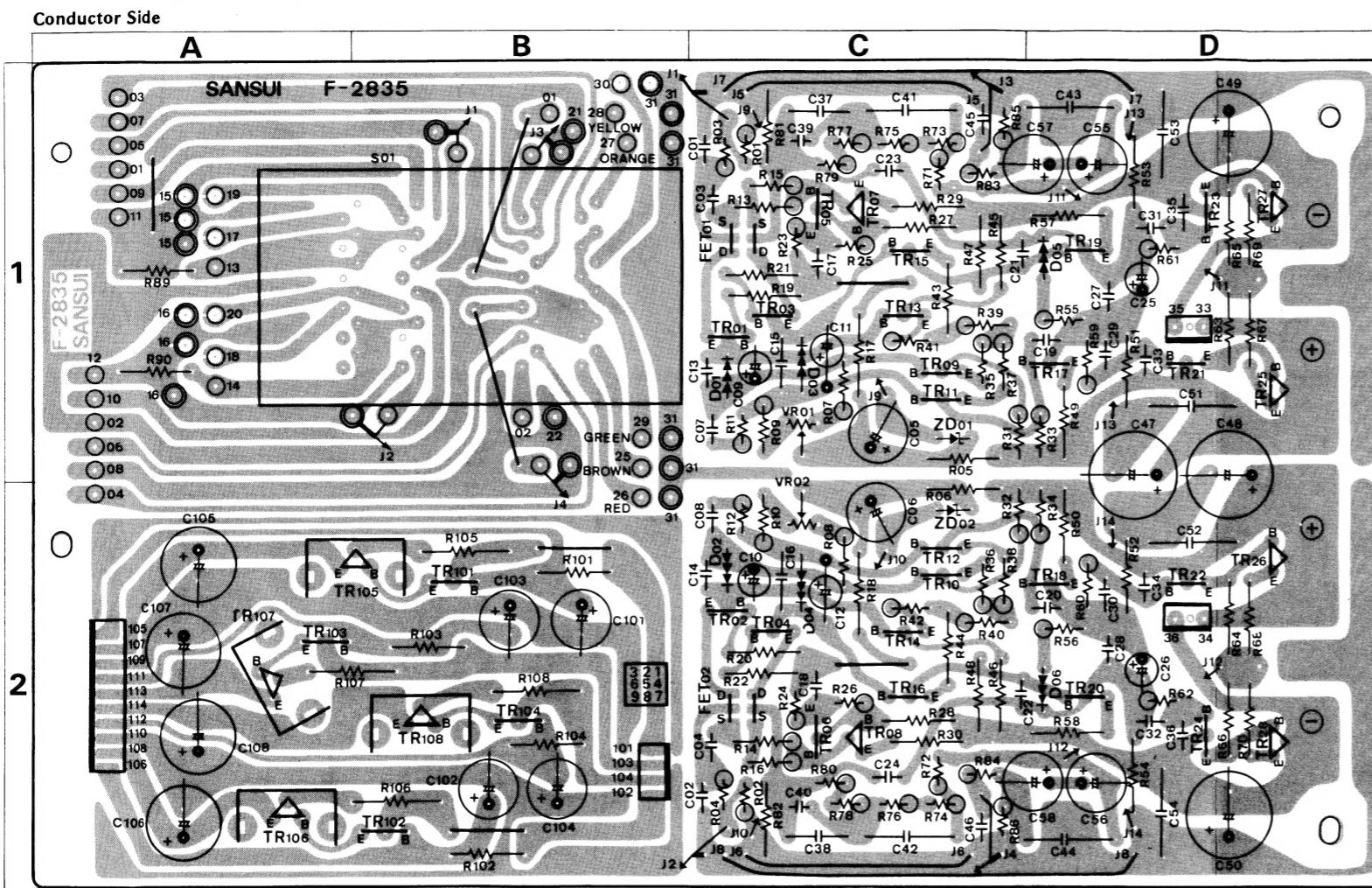
(Stock No. 7610321)



## Parts List

Parts No.	Stock No.	Description	Position
<b>•Transistors</b>			
TR01, 02	0306071, 2	2SC1313 G, H	1B.4B
TR03, 04	0300470, 1	2SA726(W) F, G	1A.4A
<b>•FET</b>			
FET01 ~ 12	0370341 ~ 6	2SK163 K2, L1, L2, M1, M2, N1	2, 3A
FET13 ~ 24	0370331 ~ 6	2SK44 K2, L1, L2, M1, M2, N1	1, 2, 3, 4A
C 01, 02	0680001	0.001 $\mu$ F 100V P.C.	2B.3B
C 03, 04	0513101	100 $\mu$ F 25V E.C.	1A.4A
C 05, 06	0513101	100 $\mu$ F 25V E.C.	2A.3A
C 07, 08	0602109	1 $\mu$ F 100V M.C.	1A.4A
C 09, 10	0602109	1 $\mu$ F 100V M.C.	1A.4A
C 11, 12	0515100	10 $\mu$ F 50V E.C.	1A.4A
C 13, 14	0515100	10 $\mu$ F 50V E.C.	1A.4A
C 15, 16	0623101	1000 $\mu$ F 125V P.C.	1B.4B
C 17, 18	0623101	1000 $\mu$ F 125V P.C.	1A.4A
C 19, 20	0622102	1000pF 125V P.C.	2A.3A
R 01 ~ 08	0280229	2.2 $\Omega$ 1/3W C.R.	2B.3B
R 13 ~ 24	0280229	2.2 $\Omega$ 1/3W C.R.	1, 2, 3, 4B
R 25, 26	0212471	470 $\Omega$ 2W N.I.R.	1B.4B
R 27, 28	0212471	470 $\Omega$ 2W N.I.R.	1A.4A
R 29, 30	0280271	270 $\Omega$ 1/3W C.R.	2A.3A
R 31, 32	0280332	3.3k $\Omega$ 1/3W C.R.	1A.4A, B
R 33, 34	0280330	330 $\Omega$ 1/3W C.R.	1B.4B
R 35, 36	0280101	100 $\Omega$ 1/3W C.R.	1A.4A
R 37, 38	0280223	22k $\Omega$ 1/3W C.R.	2A.3A
R 39, 40	0280330	330 $\Omega$ 1/3W C.R.	2B.3B
R 41, 42	0280109	13 $\Omega$ 1/3W C.R.	2A.3A
R 43, 44	0280109	1 $\Omega$ 1/3W C.R.	2A.3A
R 45, 46	0280820	82.0 $\Omega$ 1/3W C.R.	2A.3A
R 47, 48	0280103	10k $\Omega$ 1/3W C.R.	1B.4B
R 49, 50	0280103	10k $\Omega$ 1/3W C.R.	1B.4B
R 53, 54	0280390	39 $\Omega$ 1/3W C.R.	
R 55, 56	0280221	220 $\Omega$ 1/3W C.R.	
VR01, 02	1033590	Volume, 220 $\Omega$ (B) (Balance Adjust)	1B.4B
VR03 ~ 06	1035400	Volume, 33k $\Omega$ (B) (Voltage Regulator Adjust)	1, 4B

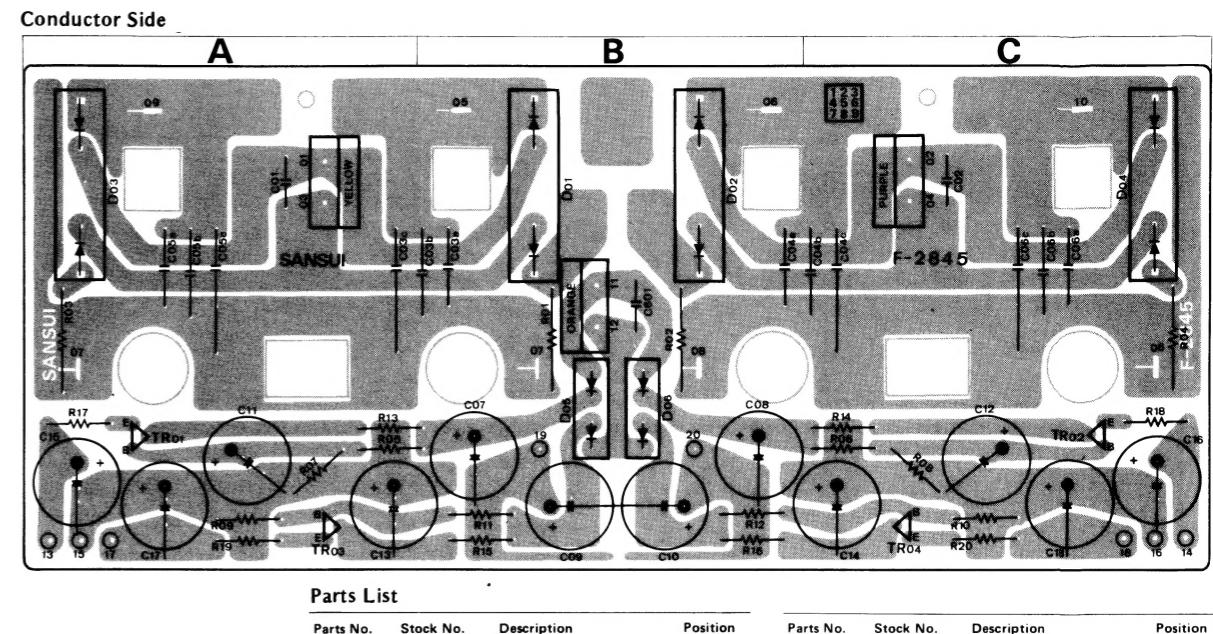
4-3. F-2835 Equalizer Amp Circuit Board (Stock No. 7551331)



Parts List

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
<b>•Transistors</b>											
TR01, 02	0306740, 1	2SC1845 E, U	1C.2C	C 23, 24	0623909	90F 125V P.C.	1C.2C	R 37, 38	0280181	180Ω 1/3W C.R.	1C.2C
TR03, 04	0306740, 1	2SC1845 E, U	1C.2C	C 25, 26	0515109	1μF 50V E.C.	1D.2D	R 39, 40	0280680	68Ω 1/3W C.R.	1C.2C
TR05, 06	0301090, 1	2SA992 E, U	1C.2C	C 27, 28	0680041	0.047μF 100V M.C.	1D.2D	R 41, 42	0280181	180Ω 1/3W C.R.	1C.2C
TR07, 08	0306680, 1	2SC2071 B, V	1C.2C	C 29, 30	0680001	0.001μF 100V M.C.	1D.2D	R 43, 44	0280181	180Ω 1/3W C.R.	1C.2C
TR09, 10	0306740, 1	2SC1845 E, U	1C.2C	C 31, 32	0680001	0.001μF 100V M.C.	1D.2D	R 45, 46	0280821	82Ω 0.1/3W C.R.	1C.2C
TR11, 12	0306740, 1	2SC1845 E, U	1C.2C	C 33, 34	0623220	22pF 125V P.C.	1D.2D	R 47, 48	0280821	82Ω 0.1/3W C.R.	1C.2C
TR13, 14	0301090, 1	2SA992 E, U	1C.2C	C 35, 36	0623220	22pF 125V P.C.	1D.2D	R 49, 50	0280121	120Ω 1/3W C.R.	1D.2D
TR15, 16	0301090, 1	2SA992 E, U	1C.2C	C 37, 38	0620233	0.033μF 50V M.C.	1C.2C	R 51, 52	0280393	39kΩ 1/3W C.R.	1D.2D
TR17, 18	0301090, 1	2SA992 E, U	1D.2D	C 39, 40	0622202	2000pF 125V P.C.	1C.2C	R 53, 54	0280393	39kΩ 1/3W C.R.	1D.2D
TR19, 20	0306740, 1	2SC1845 E, U	1D.2D	C 41, 42	0682037	0.12μF 100V M.C.	1C.2C	R 55, 56	0280331	330Ω 1/3W C.R.	1D.2D
TR21, 22	0306740, 1	2SC1845 E, U	1D.2D	C 43, 44	0681001	0.47μF 100V M.C.	1D.2D	R 57, 58	0280121	120Ω 1/3W C.R.	1D.2D
TR23, 24	0301090, 1	2SA992 E, U	1D.2D	C 45, 46	0680013	0.0033μF 100V M.C.	1C.2C	R 59, 60	0280391	390Ω 1/3W C.R.	1D.2D
TR25, 26	0306680, 1	2SC2071 B, V	1D.2D	C 47, 48	0515331	330μF 50V E.C.	1D	R 61, 62	0280391	390Ω 1/3W C.R.	1D.2D
TR27, 28	0301090, 1	2SA992 B, V	1D.2D	C 49, 50	0515331	330μF 50V E.C.	1D.2D	R 63, 64	0280331	330Ω 1/3W C.R.	1D.2D
TR101, 102	0306290, 1	2SC1400 (1) E, U	2B	C 51, 52	0681001	0.47μF 250V M.C.	1D.2D	R 65, 66	0280331	330Ω 1/3W C.R.	1D.2D
TR103, 104	0300890, 1	2SA750 (3) E, U	2A.2B	C 53, 54	0681001	0.47μF 250V M.C.	1D.2D	R 67, 68	0210330	33Ω 1/2W N.I.R.	1D.2D
TR105, 106	0308611, 2	2SD357 D, E	2A, B.2A	C 55, 56	0514101	100μF 35V E.C.	1D.2D	R 69, 70	0210330	33Ω 1/2W N.I.R.	1D.2D
TR107, 108	0303441, 2	2SB527 D, E	2A, B.2B	C 57, 58	0514101	100μF 35V E.C.	1D.2D	R 71, 72	0280470	47Ω 1/3W C.R.	1C.2C
FET01, 02	0370350	2SK146Y	1C.2C	C 105, 106	0514221	220μF 35V E.C.	2A	R 73, 74	0231203	20kΩ 1/2W M.R.	1C.2C
FET01, 02	0370350	2SK146Y	1C.2C	C 107, 108	0514221	220μF 35V E.C.	2A	R 75, 76	0231682	6.8kΩ 1/2W M.R.	1C.2C
				C 107, 108	0681021	1μF 250V M.C.	2A	R 77, 78	0231182	1.8kΩ 1/2W M.R.	1C.2C
				C 107, 108	0681021	1μF 250V M.C.	2A	R 79, 80	0231391	390Ω 1/2W M.R.	1C.2C
				C 107, 108	0681021	1μF 250V M.C.	2A	R 81, 82	0231470	47Ω 1/2W M.R.	1C.2C
				C 107, 108	0681021	1μF 250V M.C.	2A	R 83, 84	0280561	560Ω 1/3W C.R.	1C.2C
				C 107, 108	0681021	1μF 250V M.C.	2A	R 85, 86	0280104	100kΩ 1/3W C.R.	1C.2C
				C 107, 108	0681021	1μF 250V M.C.	2A	R 87, 88	0280331	330Ω 1/3W C.R.	1C.2C
				C 107, 108	0681021	1μF 250V M.C.	2A	R 89, 90	0280104	100kΩ 1/3W C.R.	1A
				C 107, 108	0681021	1μF 250V M.C.	2A	R 91, 92	0280104	100kΩ 1/3W C.R.	1A
				C 107, 108	0681021	1μF 250V M.C.	2A	R 93, 94	0280104	100kΩ 1/3W C.R.	1A
				C 107, 108	0681021	1μF 250V M.C.	2A	R 95, 96	0280104	100kΩ 1/3W C.R.	1A
				C 107, 108	0681021	1μF 250V M.C.	2A	R 97, 98	0280104	100kΩ 1/3W C.R.	1A
				C 107, 108	0681021	1μF 250V M.C.	2A	R 99, 100	0280104	100kΩ 1/3W C.R.	1A
				C 107, 108	0681021	1μF 250V M.C.	2A	R 101, 102	0280822	8.2kΩ 1/3W C.R.	2B
				C 107, 108	0681021	1μF 250V M.C.	2A	R 103, 104	0308822	8.2kΩ 1/3W C.R.	2B
				C 107, 108	0681021	1μF 250V M.C.	2A	R 105, 106	0211101	100Ω 1W N.I.R.	2B
				C 107, 108	0681021	1μF 250V M.C.	2A	R 107, 108	0211101	100Ω 1W N.I.R.	2A, B.2B
				C 107, 108	0681021	1μF 250V M.C.	2A	VR01, 02	1034170, 1	220Ω (B) Volume (DC OV Adjust)	1C.2C
				C 107, 108	0681021	1μF 250V M.C.	2A	S 01	1104380	Rotary Switch, Input Selector	1A, B
				C 107, 108	0681021	1μF 250V M.C.	2A	2411560	3P Connector		
				C 107, 108	0681021	1μF 250V M.C.	2A	2411570	2.5MMP Connector		
				C 107, 108	0681021	1μF 250V M.C.	2A	2411630	10P Connector		

4-4. F-2845 Power Supply Circuit Board for power amp section (Stock No. 7503011)

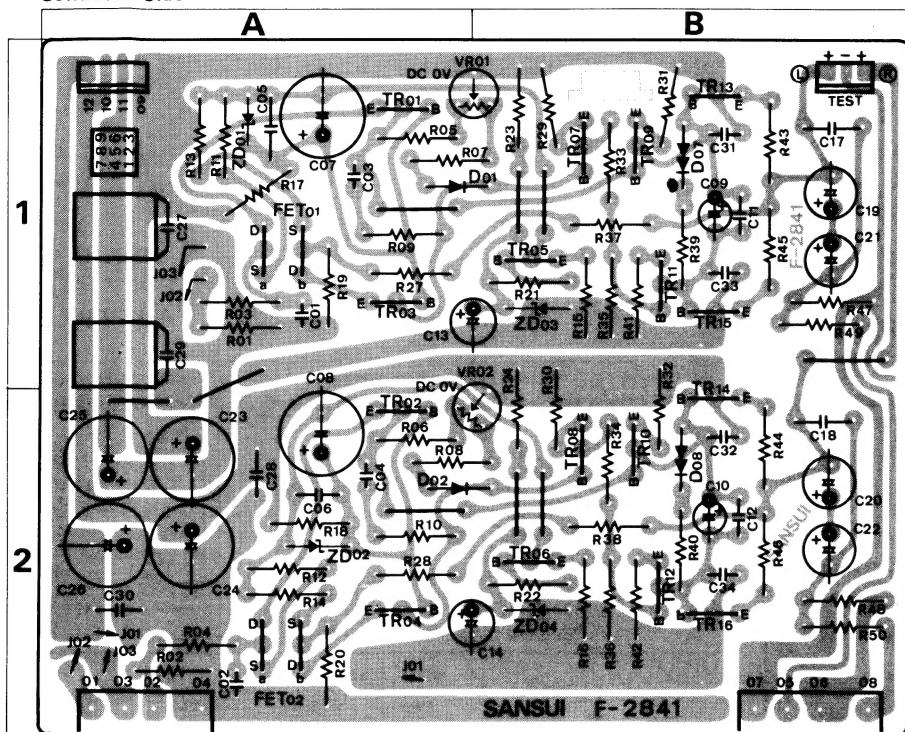


Parts List

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
<b>•Transistors</b>							
TR01, 02	0308611, 2	2SD357 D, E	A.C	R 601	0606108	0.1μF 250V M.C.	B
TR03, 04	0303441, 2	2SB527 D, E	A.C	R 01, 02	0212332	3.3kΩ 2W N.I.R.	B
TR05, 06	0311700	RB-152	B	R 05, 06	0280153	15kΩ 1/3W C.R.	A.C
TR07, 08	0311290	SS-3	B	R 07, 08	0280563	56kΩ 1/3W C.R.	A.C
TR09, 10	0311300	SS-3R	B	R 09, 10	0280563	56kΩ 1/3W C.R.	A.C
TR11, 12	0210100	10Ω 1/2W N.I.R.	B	R 11, 12	0280153	15kΩ 1/3W C.R.	B
TR13, 14	0210100	10Ω 1/2W N.I.R.	A.C	R 13, 14	0212152	1.5kΩ 2W N.I.R.	A.C
TR15, 16	0210100	10Ω 1/2W N.I.R.	A.C	R 15, 16	0210100	10Ω 1/2W N.I.R.	

## 4-6. F-2841 Flat Amp Circuit Board (Stock No. 7596641)

Conductor Side



## Parts List

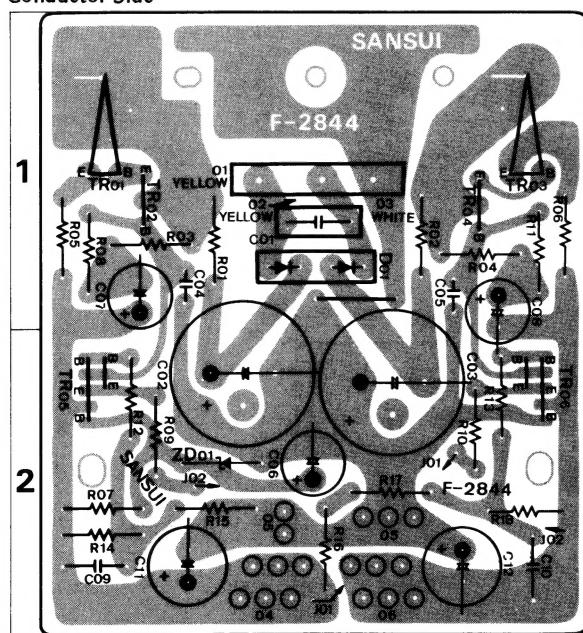
Parts No.	Stock No.	Description	Position
●Transistors			
TR01, 02	0306071, 2	2SC1313 G, H	1A.2A
TR03, 04	0306071, 2	2SC1313 G, H	1A.2A
TR05, 06	0306680, 1	2SC2071 B, V	1B.2B
TR07, 08	0301090, 1	2SA992 E, U	1B.2B
TR09, 10	0301090, 1	2SA992 E, U	1B.2B
TR11, 12	0306740, 1	2SC1845 E, U	1B.2B
●FET			
FET01, 02	0370310, 1	FET 2SK129 K, L	1A.2A
●Diodes			
D 01, 02	0311160 or 0311180	1S2473D or 1S1588	1A,B.2A,B

Parts No.	Stock No.	Description	Position
TR13, 14	0306740, 1	2SC1845 E, U	1B.2B
TR15, 16	0301090, 1	2SA992 E, U	1B.2B
●FET			
FET01, 02	0370310, 1	FET 2SK129 K, L	1A.2A
●Diodes			
D 01, 02	0311160 or 0311180	1S2473D or 1S1588	1A,B.2A,B

Parts No.	Stock No.	Description	Position
●Varistors			
D 07, 08	0340150	MV-12	1B.2B
●Zener Diodes			
ZD01, 02	0316240	RD-9	1A.2A
ZD03, 04	0316390	RD6.2E B	1B.2B
C 01, 02	0622330	33pF 125V P.C.	1A.2A
C 03, 04	0622391	390pF 125V P.C.	1A.2A
C 05, 06	0680049	0.1μF 100V M.C.	1A.2A
C 07, 08	0513221	220μF 25V E.C.	1A.2A
C 09, 10	0515109	1μF 50V E.C.	1B.2B
C 11, 12	0680041	0.047μF 100V M.C.	1B.2B
C 15, 16	0623509	5pF 125V P.C.	1B.2B
C 17, 18	0680061	0.33μF 100V M.C.	1B.2B
C 19, 20	0513101	100μF 25V E.C.	1B.2B
C 21, 22	0513101	100μF 25V E.C.	1B.2B
C 23, 24	0515101	100μF 50V E.C.	2A
C 25, 26	0680151	100μF 50V E.C.	2A
C 27, 28	0680057	0.22μF 100V M.C.	1A.2A
C 29, 30	0680057	0.22μF 100V M.C.	1A.2A
C 31, 32	0623509	5pF 125V P.C.	1B.2B
C 33, 34	0623509	5pF 125V P.C.	1B.2B
C 35, 36	0623309	3pF 125V P.C.	1B.2B
C 37, 38	0623309	3pF 125V P.C.	1B.2B
R 35, 36	0280272	2.7kΩ 1/3W C.R.	1A.2A
R 37, 38	0280272	27kΩ 1/3W C.R.	1A.2A
R 39, 40	0280820	82Ω 1/3W C.R.	1A.2A
R 07, 08	0280272	2.7kΩ 1/3W C.R.	1A, B.2A
R 09, 10	0280471	47Ω 1/3W C.R.	1A.2A
R 11, 12	0280220	22Ω 1/3W C.R.	1A.2A
R 13, 14	0280220	22Ω 1/3W C.R.	1A.2A
R 15, 16	0280102	1kΩ 1/3W C.R.	1B.2B
R 17, 18	0280333	33kΩ 1/3W C.R.	1A.2A
R 19, 20	0280122	1.2kΩ 1/3W C.R.	1A.2A
R 21, 22	0280101	100Ω 1/3W C.R.	1B.2B
R 23, 24	0280223	22kΩ 1/3W C.R.	1B.2B
R 27, 28	0280222	2.2kΩ 1/3W C.R.	1A.2A
R 29, 30	0280272	2.7kΩ 1/3W C.R.	1B.2B
R 31, 32	0280102	1kΩ 1/3W C.R.	1B.2B
R 33, 34	0280101	100Ω 1/3W C.R.	1B.2B
R 35, 36	0280272	100Ω 1/3W C.R.	1B.2B
R 37, 38	0280223	22kΩ 1/3W C.R.	1B.2B
R 39, 40	0280820	82kΩ 1/3W C.R.	1B.2B
R 41, 42	0280102	1kΩ 1/3W C.R.	1B.2B
R 43, 44	0210470	47Ω 1/2W N.I.R.	1B.2B
R 45, 46	0210470	47Ω 1/2W N.I.R.	1B.2B
R 47, 48	0280223	22kΩ 1/3W C.R.	1B.2B
R 49, 50	0280101	100Ω 1/3W C.R.	1B.2B
VR01, 02	1033610	Volume, 470Ω (B) (Center DC 0V Adjust)	1A.B.2A,B

## 4-7. F-2844 Power Supply Circuit Board for pre-amp section (Stock No. 7503001)

Conductor Side



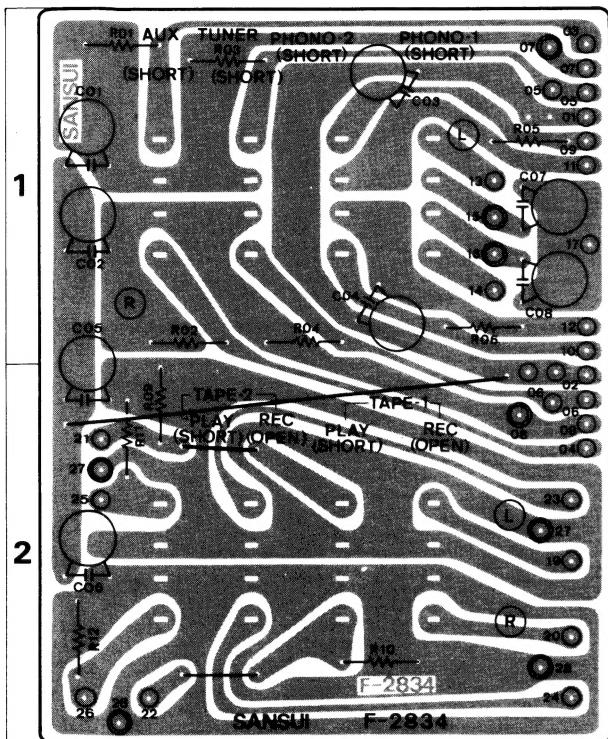
## Parts List

Parts No.	Stock No.	Description	Position
●Transistors			
TR01	0308501, 2	2SD357 D, E	1
TR02	0306290, 1	2SC1400 (I) E, U	1
TR03	0303331, 2	2SB527 D, E	1
TR04	0300890, 1	2SA750 (3) E, U	1
TR05	0306730, 1	2SC2259 F, G	2
TR06	0301080, 1	2SA979 F, G	2
●Diode			
D 01	0311700	RB-152	1
●Zener Diode			
ZD01	0316510	RD24E B	2
C 01	0606108	0.1μF 250V P.C.	1
C 02, 03	0549207	1000μF 50V E.C.	2
C 09, 10	0602228	0.022μF 100WV M.C.	2
C 11, 12	0515101	100μF 50V E.C.	2
R 01, 02	0210399	3.9Ω 1/2W N.I.R.	1
R 03, 04	0280472	4.7kΩ 1/3W C.R.	1
R 05, 06	0210229	2.2kΩ 1/2W N.I.R.	1
R 07	0280222	2.2kΩ 1/3W C.R.	2
R 08	0280103	10kΩ 1/3W C.R.	1
R 09	0280333	33kΩ 1/3W C.R.	2
R 10	0280203	20kΩ 1/3W C.R.	2
R 11	0280103	10kΩ 1/3W C.R.	1
R 12, 13	0280472	4.7kΩ 1/3W C.R.	2
R 14	0280163	16kΩ 1/3W C.R.	2
R 15	0280243	24kΩ 1/3W C.R.	2
R 16, 17	0280203	20kΩ 1/3W C.R.	2
R 18	0280393	39kΩ 1/3W C.R.	2
2410610		3P Plug Ass'y	

Note: The circuit boards, F-2834, F-2846, F-2838, F-2842, F-2843, F-2837, F-2928 & F-2836 are not supplied as the assembled, the individual parts on the circuit board, however, are provided for orders.

#### 4-8. F-2834 Input Terminal Circuit Board

### Conductor Side

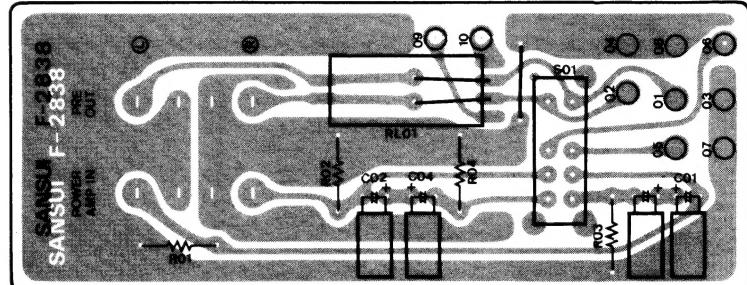


## Parts List

Parts No.	Stock No.	Description	Position
R 01, 02	0280105	1MΩ 1/3W C.R.	1
R 03, 04	0280105	1MΩ 1/3W C.R.	1
R 07, 08	0280104	100kΩ 1/3W C.R.	
R 09, 10	0280105	1MΩ 1/3W C.R.	2
R 11, 12	0280105	1MΩ 1/3W C.R.	2
	2200620	4P Input Terminal (TUNER, AUX)	
	2200630	4P Input Terminal (PHONE-1, 2)	
	2200650	4P Input Terminal (TAPE-1, 2)	

#### 4-9. F-2838 Circuit Board between Pre & Main amp

### Conductor Side

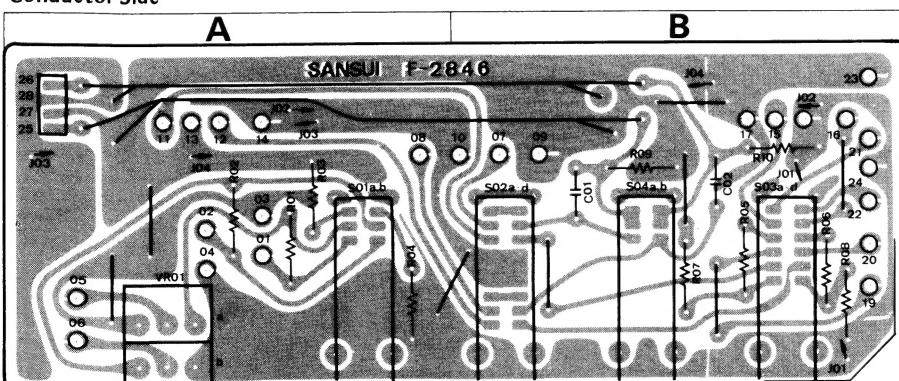


## Parts List

Parts No.	Stock No.	Description
C 01, 02	0515100	10 $\mu$ F 50V E.C.
C 03, 04	0515100	10 $\mu$ F 50V E.C.
R 01, 02	0280105	1M $\Omega$ 1/3W C.R.
R 03, 04	0280105	1M $\Omega$ 1/3W C.R.
RL01	1150430	Relay
S 01	1110290 2200650	Slide Switch, Connected/Separated 4P Input Terminal (PRE AMP, POWER AMP)

#### 4-10. F-2846 Muting, Jump, Tone Defeat Circuit Board

Conductor Side

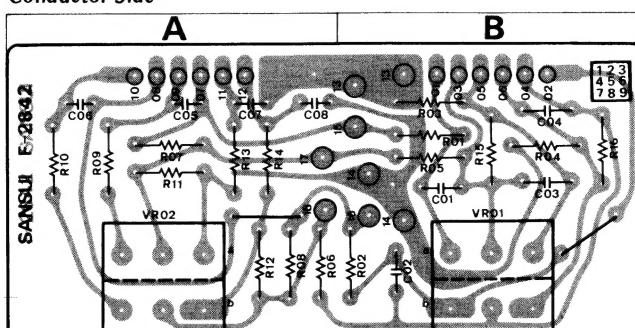


## Parts List

Parts No.	Stock No.	Description	Position
C 01, 02	0680061	0.33 $\mu$ F 100V	B
C 03, 04	0680017	0.0047 $\mu$ F 100V M.C.	
R 01, 02	0280563	56k $\Omega$ 1/3W C.R.	A
R 03, 04	0280682	6.8k $\Omega$ 1/3W C.R.	A
R 05, 06	0280472	4.7k $\Omega$ 1/3W C.R.	B
R 07, 08	0280222	2.2k $\Omega$ 1/3W C.R.	B
R 09, 10	0280823	82k $\Omega$ 1/3W C.R.	B
R 11, 12	0280100	10 $\Omega$ 1/3W C.R.	
VR01	1015170, 1	250k $\Omega$ (M.N) Balance Volume	A
S 01	1171130	Lever Switch, Miting	A
S 02	1171170	Lever Switch, Jmp	B
S 03	1171150	Lever Switch, Time Defeat	B
S 04	1171130	Lever Switch, Sisomic Filter	B
	2411570	4P Connector	

#### 4-11. E-2842 Tone Control Circuit Board

### Conductor Side

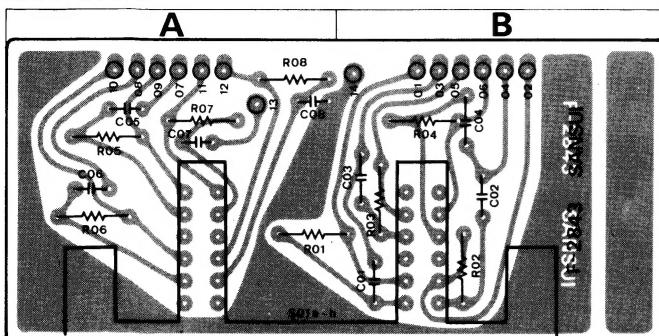


## Parts List

Parts No.	Stock No.	Description	Position
C 01, 02	0680051	0.12μF 100V N.C.	B
C 03, 04	0680058	0.24μF 100V N.C.	B
C 05, 06	0680029	0.015μF 100V N.C.	A
C 07, 08	0680039	0.039μF 100V ? C.	A
C 09, 10	0622302	3000pF 100V ? C.	
R 01, 02	0280392	3.9kΩ 1/3W C.R.	B
R 03, 04	0280152	1.5kΩ 1/3W C.R.	B
R 05, 06	0280101	100Ω 1/3W C.R.	B, A
R 09, 10	0280681	680Ω 1/3W C.R.	A
R 11, 12	0280472	4.7kΩ 1/3W C.R.	A
R 13, 14	0280471	470Ω 1/3W C.R.	A
R 15, 16	0280822	8.2kΩ 1/3W C.R.	B
VR01, 02	1011170	5kΩ x 2, Tone Cntr Volume, (Bass & Treble)	B, A

## 4-12. F-2843 Turn-over Circuit Board

Conductor Side



## Parts List

Parts No.	Stock No.	Description	Position
C 01, 02	0680051	0.12 $\mu$ F 100V M.C.	B
C 03, 04	0680058	0.24 $\mu$ F 100V M.C.	B
C 05, 06	0680029	0.015 $\mu$ F 100V M.C.	A
C 07, 08	0680038	0.036 $\mu$ F 100V M.C.	A
C 09, 10	0622302	3000 $\mu$ F 125V P.C.	
R 01, 02	0280105	1M $\Omega$ 1/3W C.R.	A, B
R 03, 04	0280105	1M $\Omega$ 1/3W C.R.	B
R 05, 06	0280105	1M $\Omega$ 1/3W C.R.	A
R 07, 08	0280105	1M $\Omega$ 1/3W C.R.	A
S 01	1131410	Push Switch, Tone Selector	A, B

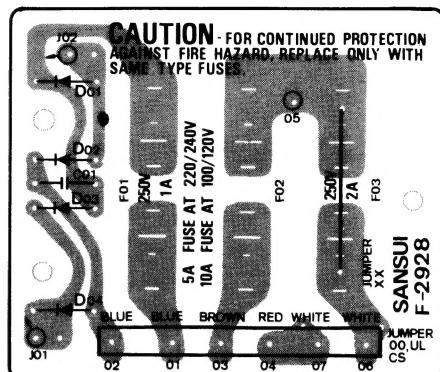
## 4-14. F-2836 Tape Playback Circuit Board

## Parts List

Parts No.	Stock No.	Description
S 01	1131400	Push Switch, PLAY
	2411570	2.5MMP Connector
	2411590	6P Connector

## 4-13. F-2928 Rectifier Circuit Board

Conductor Side



## Parts List

Parts No.	Stock No.	Description
•Diodes		
D 01, 02	0310340	10D1
D 03, 04	0310340	10D1
C 01	0606108	0.1 $\mu$ F 250V M.C.
F 01	0431220	1A 250V AC Fuse
F 02	0431320	10A 250V AC Fuse
	0432290	5A 125V AC Fuse
	0434060	10A 250V AC Fuse
F 03	0431240	2A 250V AC Fuse

## 4-15. F-2837 Tape-copy Switch Circuit Board

## Parts List

Parts No.	Stock No.	Description
	1102750	Rotary Switch, Tape-Rec
	2411580	5P Connector

## Abbreviations

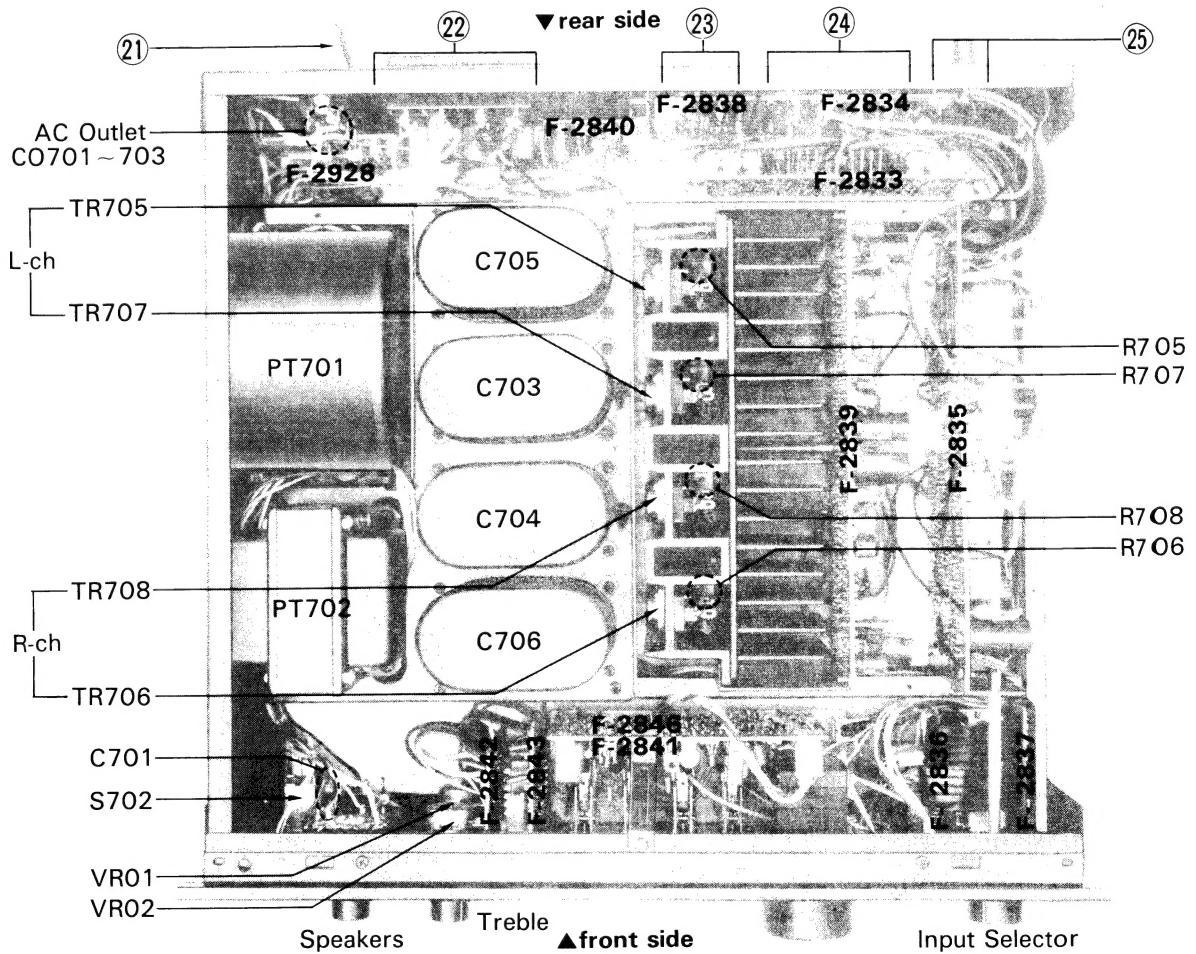
<b>C.R.</b>	: Carbon Resistor	<b>E.C.</b>	: Electrolytic Capacitor
<b>S.R.</b>	: Solid Resistor	<b>BP.E.C.</b>	: Bi-Polar Electrolytic Capacitor
<b>Ce.R.</b>	: Cement Resistor	<b>C C.</b>	: Ceramic Capacitor
<b>M.R.</b>	: Metal Film Resistor	<b>Mi.C.</b>	: Mica Capacitor
<b>F.R.</b>	: Fusing Resistor	<b>O.C.</b>	: Oil Capacitor
<b>N.I.R.</b>	: Non-Inflammable Resistor	<b>P.C.</b>	: Polystyrene Capacitor
<b>M.C.</b>	: Mylar Capacitor	<b>T.C.</b>	: Tantalum Capacitor

## 5. OTHER PARTS

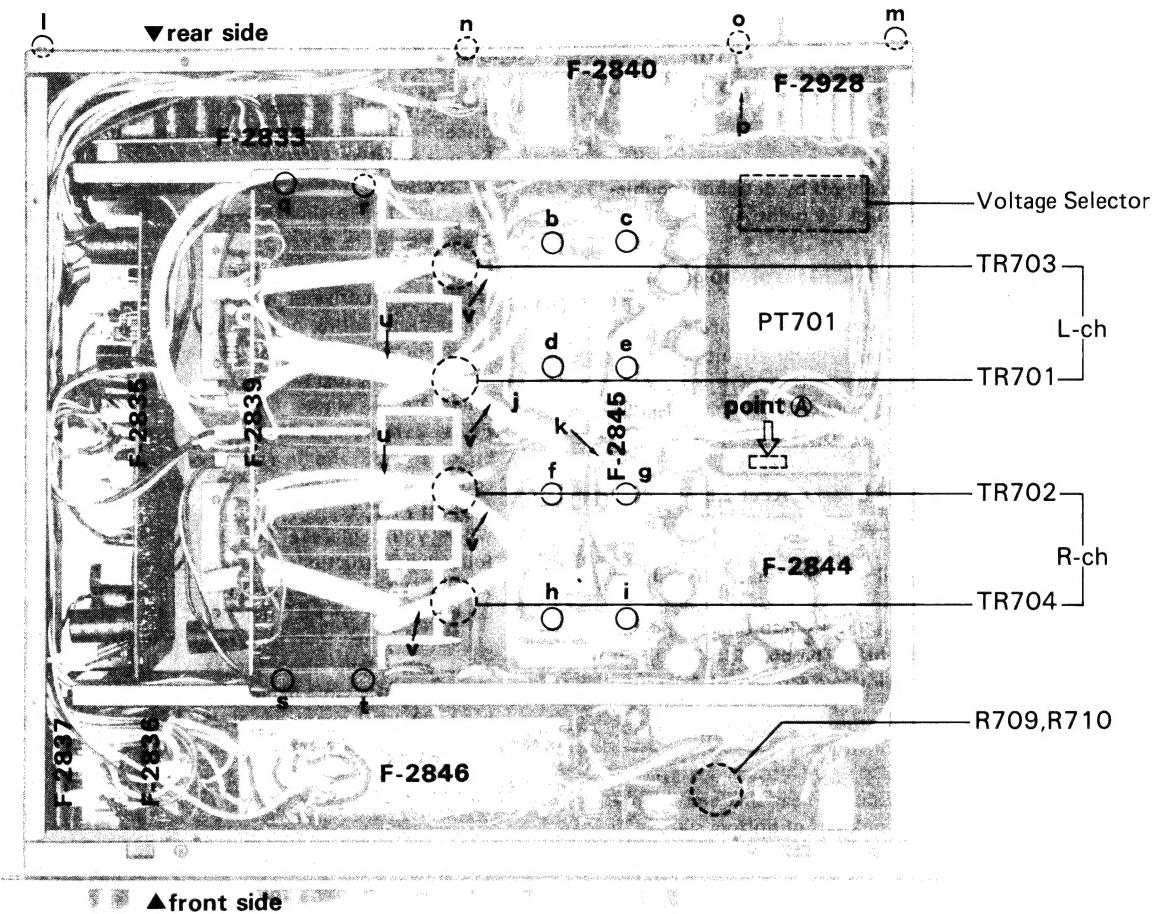
## 5-1. Front View



## 5-2. Top View



## 5-3. Bottom View



Parts List (Front View)

Parts No.	Stock No.	Description
1	5006780	Bonnet
2	7007961	Front Panel Ass'y (includes Light Emitting Diode, Knob Guide, Push Switch Knob, Sansui Badge)
3	5336600	Sansui Badge
4	5318861	Level Volume Knob
4	1090410	100kΩ x 2 Level Volume
5	0319110	Light Emitting Diode
6	{5318830	Selector Knob
6	1104380	Rotary Switch, Input Selector
7	{5318840	Tape Copy Knob
7	1102750	Rotary Switch, Tape Copy
8	{5326620	Push Switch Knob
8	{5286721	Knob Guide
8	1131400	Push Switch
9	{5318850	Balance Volume Knob
9	{1015170, 1	250kΩ (MN) x 2 Balance Volume
10	{5326612	Lever Switch Knob
10	1171130	Lever Switch, muting
11	{5326612	Lever Switch Knob
11	1171170	Lever Switch, jump
12	{5326612	Lever Switch Knob
12	1171130	Lever Switch, subsonic
13	{5326612	Lever Switch Knob
13	1171150	Lever Switch, tone defeat
14	{5286721	Knob Guide
14	1131410	Push Switch, turn-over
15	5066390	Bottom Plate
16	{5318840	Tone Volume Knob
16	1011170	100kΩ (C) x 2, Treble & Bass Volume
17	2430290	Headphone Jack
18	{5318840	Speaker Selector Knob
18	1101900, 1	Rotary Switch, Speaker
19	5507070	Leg
20	{5326612	Lever Switch Knob
20	1171630	Lever Switch, Power

Parts List (Top &amp; Bottom View)

Parts No.	Stock No.	Description
21	3800470	Power Cord
	3910600	Strain Relief Bushing
22	2290190	Speaker Terminal
23	2200650	4P Input Terminal (PRE AMP/POWER AMP)
24	2200620	4P Input Terminal (TUNER, AUX)
	2200630	4P Input Terminal (PHONO-1, 2)
	2200650	4P Input Terminal (TAPE-1, 2)
25	2230190	Ground Terminal
	2410091	Voltage Selector Plug
	2410830	Voltage Selector Socket
●Transistors		
TR 701, 702	{0306710, 1	NMC1012 O, Y
TR 705, 706	{0301060, 1	NMA1012 O, Y
TR 703, 704		
TR 707, 708		
C 701	0659801	0.01μF 150V C.C.
C703 ~ 706	0559522	15000μF 63V E.C.
R701 ~ 708	0159130	0.33Ω 5W C.R.
R 709, 710	0202221	220Ω 2W N.I.R.
C0701 ~ 703	2450070	AC Outlet
S 702	1171600	Power Switch
PT 701	4002840	Power Transformer
PT 702	4002830	Power Transformer

## 6. REPLACEMENTS & REPAIR NOTES

### 6-1. Power Supply Circuit Board, F-2844 for pre-amp section (refer to pictures on page 9, 10)

- 1) Remove bottom plate 15
- 2) Take off a screw for installing F-2844
- 3) The circuit board, F-2844 can be easily off by detaching double-faced adhesive tape just on the back of point(A).

### 2. Power Supply Circuit Board, F-2845 for power amp section

- 1) Take off 8 screws (b, c, d, e, f, g, h, i) fixing the taps of electrolytic capacitors of C705, C703, C704, C706 with the circuit board.
- 2) Disconnect a grey wire soldered only on GND lag, (j).
- 3) Plug out two orange wires from plug socket, "k", on the circuit board.

### 3. Protector Circuit Board, F-2840 and Rectifier Circuit Board, F-2928

- 1) Remove bottom plate first.
- 2) Take off 5 screws (l, m) for installing the rear panel and the panel will be easily off.
- 3) Then take off 4 screws (n, o) installing F-2840 board, and the F-2840 with F-2928 board can be off, (The board, F-2840, can be separated from F-2928 by removing two screws, (p).)

### 4. Power transistors

- 1) Remove bottom plate.
- 2) Take 4 screws (q, r, s, t) off for installing heat sink and disconnect wires (u, v), then pull the heat sink out of bottom side.

### 6-2. Repair notes

- 1) Turn level volume down or power switch off, when inserting or disconnecting shielded cable with plug into/out of input terminals on rear panel of AU-919. Otherwise, power driver transistor (s) or speaker would be defective due to clicks occurred by the contact inside the female plug.
- 2) If you replace the defective power transistor (s), check all other transistors on driver amp circuit board, F-2839.
- 3) When dismantling heat sink, check or repair of equalizer amp circuit board, F-2835 can be made, as the circuit board is held with heat sink together by two screws.
- 4) There are six kinds of ranks (K2, L1, L2, M1, M2, N) of both FETs, 2SK163 and 2SJ44 respectively on MC head amp circuit board, F-2833, and the circuitry on the board is parallel-connected complementary arrangement using PNP (2SK163) and NPN type (2SJ44) FET. When you replace either 2SK163 or 2SJ44, please note the following instructions referring to the list on page 3
  1. Use same rank of all FETs on one channel.
  2. Each rank of FET determines the total gain in quantity per one channel, therefore, total quantity of FET on one channel is dependent upon the rank, due to slightly different gm, even in the same name FET.

\* As to total quantities of 2SK163 and 2SJ44 per one channel, refer to the list on page 3.

## 7. NOTES / When using external system selector for switching audio components—receivers, amplifiers, decks and loudspeakers, etc.

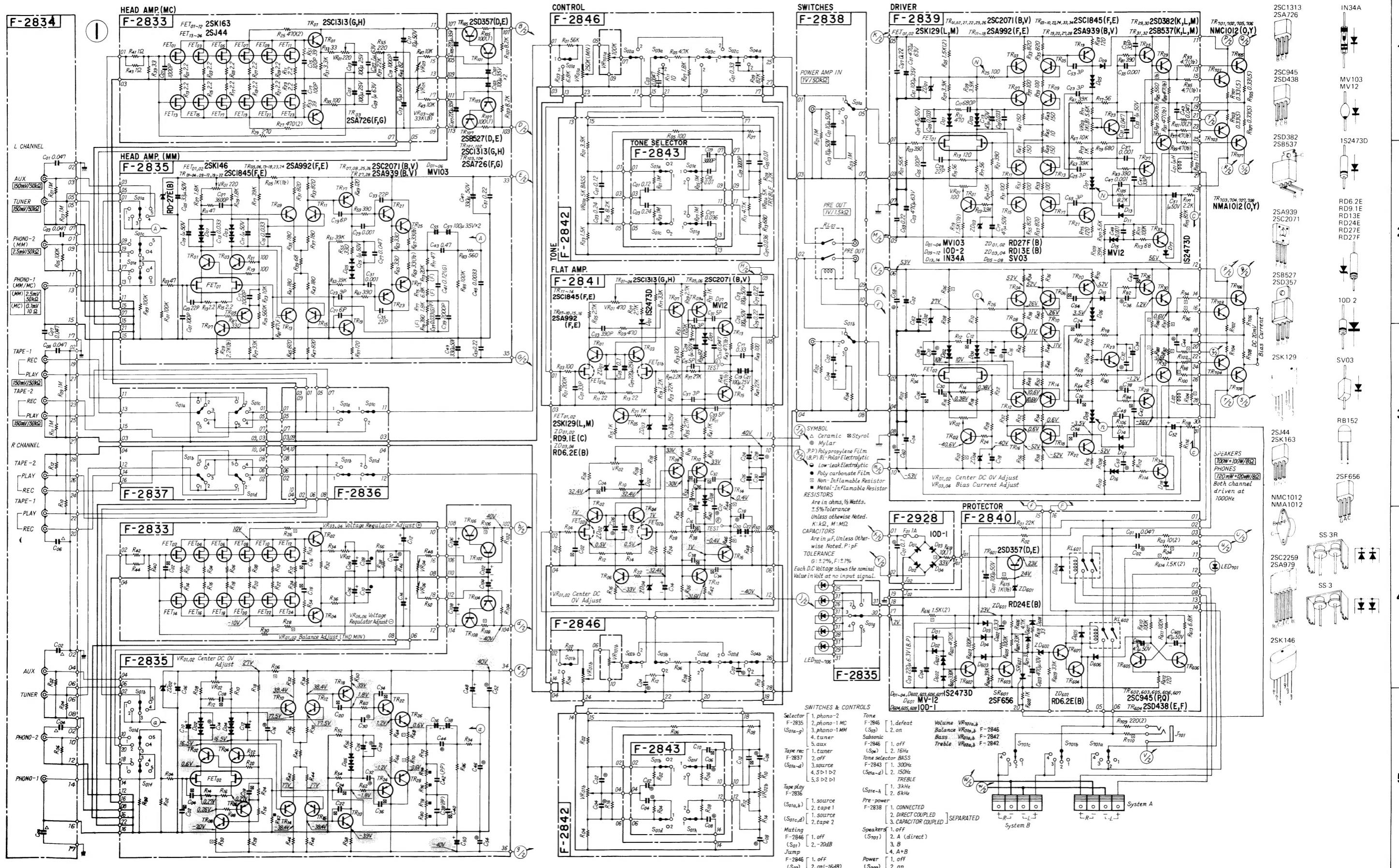
Please consider the following notes when using the external system selector with this AU-919 having wide-spread frequency range extended to 500 kHz and high slew rate, 200V/μsec.

- 1) To avoid hum-noise, blow of power or driver transistors, connect firmly an earth wire between turntable, the external system selector and this AU-919.

- 2) Do not connect earth wire commonly between outer shielded side (GND) of pin cord (or outer side of female pin plug of input terminal of AU-919) and GND terminal(s) of the system selector.
- 3) After the above connection, confirm that oscillation noise or annoying noise does not come from loudspeakers, if possible, that additionally it does not make oscillation through wide bandwidth 10 MHz or more oscilloscope.

## 8. SCHEMATIC DIAGRAM /8-1. Pre/Main Section

## 8. SCHEMATIC DIAGRAM /8-1. Pre/Main Section



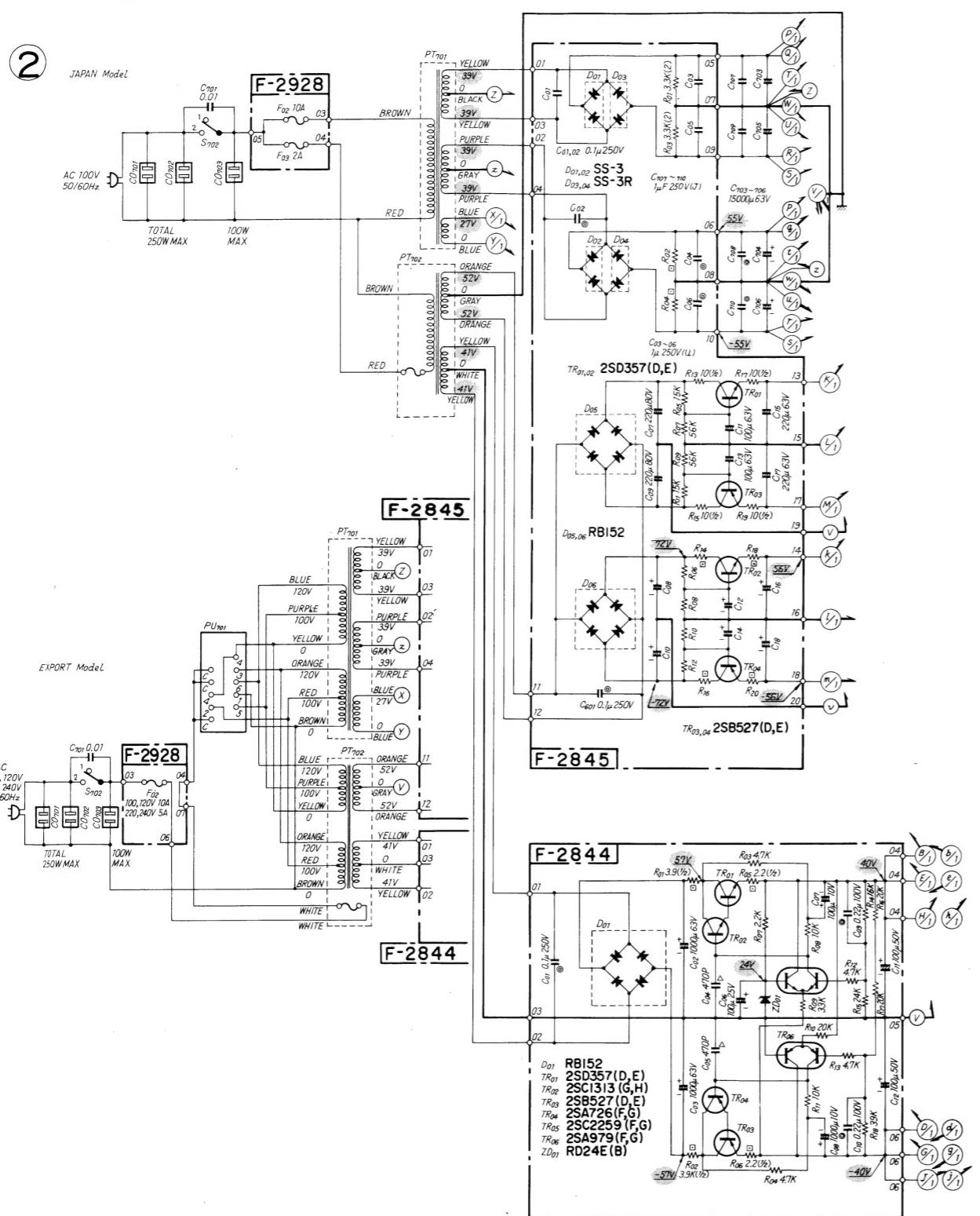
• Design and specifications subject to change without notice for improvement.  
 • La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.  
 • Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

AU-919

AU-919

A B C D

8-2. Power Supply Section

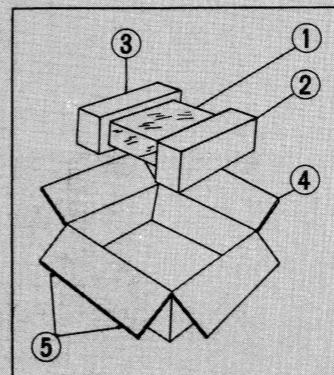


9. PACKING LIST

Parts No.	Stock No.	Description
1	9116770	Vinyl Cover
2	9028250	Stylofoam Packing (R)
3	9028240	Stylofoam Packing (L)
4	9001020	Carton Case
5	5996080	Curl Stopper

10. ACCESSORY PARTS LIST

Stock No.	Description
9203900	Operating Instructions
5396340	Rack-mounting Adaptor (ea.)
9237850	Schematic Diagram



MEMO

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**Sansui**